

# Notice of Allowability

Application No.

09/637,064

Examiner

Hugh Jones

Applicant(s)

KIDO ET AL.

Art Unit

2128

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/15/2004.
2. ☒ The allowed claim(s) is/are 1-8.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☒ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the *Applicant's response* of Paper No./Mail Date 11/15/2004.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 5/12/2005.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### **DETAILED ACTION**

1. Claims 1-8 of U. S. Patent 09/637,064, filed 8/11/2000, are pending. Applicants have stated (11/15/2004) that they have submitted corrected drawings (with "prior art" labels). Applicants are thanked for the corrections. Unfortunately, these have not been received. Please provide said drawings in response to this office action.

### **Allowable Subject Matter**

2. Claims 1-8 are allowed. The following is an examiner's statement of reasons for allowance:

- Yamamoto et al. disclose relationships between belt tension and belt gripping force and evaluating the power transmission ability in terms of slippage (col. 3, line 33 to col. 4, line 16; col. 17, line 3 to col. 18, line 62) for belt-pulley systems.

- Moon et al. disclose that mechanical imperfections, including misalignment of the sheaves, can significantly influence the levels of vibration and noise that are produced in power transmission belt drives. In this paper, laboratory measurements identify a particular source of vibration excitation for v-belts that is attributed to lateral misalignment of the sheaves. The belt is shown to undergo a fine, periodic, radial motion on the sheave at a frequency and amplitude that depend on the level of misalignment, the belt's bending stiffness, pre-tension, and wedge angle, the sheave's radius, and the belt-to-sheave friction coefficient, among other modelled variables. Periodic radial oscillation and slippage of the belt in this manner result from frictional stick-slip response at the belt/sheave interface. The belt experiences

a prescribed sawtooth-like motion on its boundary, which is one source of its high-frequency vibration and noise. An optical displacement sensor is used to record motion of the belt on the sheave, and those measurements are correlated with the near-field sound pressure. ***A theoretical model is developed to describe boundary excitation of the belt as is caused by misalignment, and in particular to predict the frequency and amplitude of the boundary motion. The model's predictions are compared with measurements for parameter studies in the belt's pre-tension and in the sheave's radius.*** Moon teaches determining power efficiency discloses (page 528, pars. 1-2) that load capacity and power transmission are dependent upon slippage and affect the ability of the pulley system to do work.

3. Tajima et al. disclose the interchangeable use of flat belts, v-belts and v-ribbed belts depending on the intended use.

4. However, the cited prior art of record does not disclose or suggest "... finding a relational expression between the WD factor and the ST factor based on an average of the WD factors calculated and an average of the ST factors calculated.", as expressly recited, in the context of the claims, and as defined in the specification.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **Conclusion**

Art Unit: 2128

**5. Any inquiry concerning this communication or earlier communications from the examiner should be:**

**directed to:**

Dr. Hugh Jones telephone number (703) 305-0023, Monday-Thursday 0830 to 0700 ET, *or* the examiner's supervisor, Jean Homere, telephone number (572) 272-3780. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, telephone number (703) 305-3900.

**mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

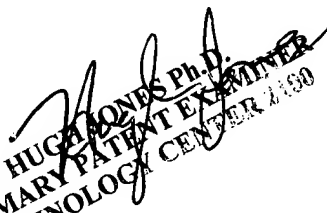
**or faxed to:**

(703) 308-9051 (for formal communications intended for entry)  
*or* (703) 308-1396 (for informal or draft communications, please label *PROPOSED* or *DRAFT*).

Dr. Hugh Jones

Primary Patent Examiner

May 12, 2005

  
HUGH JONES Ph.D.  
PRIMARY PATENT EXAMINER  
TECHNOLOGICAL CENTER 4150